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AUTHOR Tang, Thomas Li-Ping; Kim, Jwa K.
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ABSTRACT

Money has been recognized as an important factor to attract, retain, and motivate employees and has significant impacts on people's behavior, performance, and effectiveness in organizations. Created to evaluate the validity of the Money Ethic Scale, this study investigates the measurement and dimensionality of money attitudes through organizational and work-related variables. Subjects were 155 employees from 32 agencies of the Department of Mental Health and Mental Retardation in a southeastern state. Participants completed demographic variables and the Money Ethic Scale. Results suggest that the three identified factors of the revised Money Ethic Scale (budget, evil, and success) offer additional discriminant validity and nomological network of the Money Ethic Scale. Contains 19 references, and 2 tables presenting statistical analysis. (RS)

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The Meaning of Money: The Measurement and Dimensionality of the Money Ethic Scale

Thomas Li-Ping Tang

Department of Management and Marketing

Middle Tennessee State University

Jwa K. Kim

Department of Psychology

Middle Tennessee State University

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Decision Sciences Institute, Boston, MA,

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Thomas Li-Ping Tang

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Address all correspondence to Thomas Li-Ping Tang, Box 516, Department of Management and Marketing, College of Business, Middle Tennessee State University, Murfreesboro, TN 37132 USA, Telephone: (615) 898-2005, FAX: (615) 898-5308, E-Mail: TTANG@MTSU.EDU.

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The Meaning of Money: The Measurement and Dimensionality of the Money Ethic Scale

Money has been recognized as an important factor to attract, retain, and motivate employees and has significant impacts on people's behavior, performance, and effectiveness in organizations (Milkovich & Newman, 1993; Opsahl & Dunnette, 1966). Attitudes toward money are established fairly early in one's childhood and maintained in one's professional life. Money attitudes are also known to be correlated with the economic development of the nation and related to the motive to outperform others (Furnham, Kirkcaldy, & Lynn, 1994). There is also a voluminous literature on materialism (e.g., Richins & Dawson, 1992; Wachtel & Blatt, 1990) which is highly related to people's attitudes toward money. Money can be considered as a very powerful motivator to increase productivity for some people or a hygiene factor. The meaning of money is in the eye of the beholder.

The Money Ethic Scale. The major purpose of this study is to investigate the measurement and dimensionality of the Money Ethic Scale (MES) (Tang, 1992, in press a). There are several measures of money attitudes (e.g., Fank, 1994; Furnham, 1984; Lynn, 1991; Tang, 1992; Wernimont & Fitzpatrick, 1972; Yamauchi & Templer, 1982). Tang's (1992) 30-item Money Ethic Scale (MES) examined (1) positive and negative attitudes toward money, an affective component (e.g., Wernimont & Fitzpatrick, 1972), (2) different ideas and beliefs of money, a cognitive component (e.g., Furnham, 1984), and (3) the money usage, a behavioral component (e.g., Furnham, 1984). Tang (1992) applied the exploratory factor

analysis (EFA) to a sample of 249 full-time employees in the United States and developed this scale specifically for measuring money attitudes in organizational and work-related settings and investigated several other work-related variables.

Using varimax rotation, he identified six factors of money attitudes which can be grouped into three major components: an affective component (Good and Evil), a cognitive component (Achievement, Respect, and Power), and a behavioral component (Budget) (Tang, 1993). In a study of Chinese students in Taiwan, Tang (1993) examined the Money Ethic Scale (MES) and several new variables such as locus of control and strain. The selection of specific items and the empirical documentation of Cronbach's alphas, test-retest reliabilities, discriminant validity, and nomological network of the MES were very well documented in Tang (1992, 1993).

A Short Money Ethic Scale. Two items with the highest item-total correlations from each of the six factors were selected for a short 12-item Money Ethic Scale (Short-MES)(Tang, in press a, b). Using the exploratory factor analysis (EFA), Tang (in press a) identified three factors of money attitudes: Success (8 items, a cognitive component), Budget (2 items, a behavioral component), and Evil (2 items, an affective component). Further, "the Short-MES score" which was calculated by adding all 12 items with the two Evil items reverse scored was correlated with the original MES scale and was related to high economic values, low religious values, and low pay satisfaction (Tang, in press a).

There are several limitations regarding these studies. First, these studies used EFA which reflects that the analysis is data driven rather than theory driven. Second, the factors of the Money Ethic Scale were not independent. For example, Factor Good was highly related to other factors. All cognitive factors (Achievement, Respect, and Power) were highly related to each other (Tang, 1992, 1993). Third, some items had high cross-loadings. When the factors are conceptually related, one would expect some degree of cross-loadings. Finally, EFA results suggested six factors in one study (Tang, 1992) and three factors in another (Tang, in press a).

The major purposes of the present study were (1) to further refine the 12-item MES scale by removing items with high cross-loadings and reducing correlations among factors and (2) to investigate differential patterns of relations with other theoretically-relevant attitudes and behaviors. In this study, we expect to have three Factors (Evil, Success, Budget) which are similar to the existing 12-item MES measure (Tang, in press a). Job satisfaction is related to Organizational Citizenship Behavior (OCB) (Smith, Organ, & Near, 1983) and commitment. Factor Budget is related to satisfaction with supervision and overall life (Tang, 1992). People who think that money is not Evil tend to have high satisfaction with work (Tang, 1992). It is predicted that factors of the MES will be related to OCB, job satisfaction, and commitment.

Method

Participants

One hundred fifty-five employees from 32 agencies of the Department of Mental Health and Mental Retardation of a state located in the southeastern United States participated in the research voluntarily. The participants were 36.52 years old with 14.10 years of education and an average income of US$16,963.57.

Measures

Participants completed demographic variables (age, education, and income) and the Money Ethic Scale (Tang, in press a). Intrinsic and extrinsic job satisfaction as measured by the Minnesota Satisfaction Questionnaire (MSQ) (Weiss, Dawis, England, & Lofquist, 1967), Altruism and Conscientiousness of Organizational Citizenship Behavior (OCB) (Smith et al., 1983), and a modified 10-item commitment scale (Romzek, 1989) were also employed. A 5-point Likert scale with disagree strongly (1), neutral (3), and agree strongly (5) as anchor points was used.

Results and Discussion

Exploratory Factor Analysis (EFA)

Following Idaszak, Bottom, and Drasgow's (1988) model, we conducted both exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) in this paper. After several exploratory factor analyses, we eliminated six items with high cross-loadings from the 12-item MES measure. The final result was a 6-item Money Ethic Scale. Using principal components factor analysis with promax rotations, three factors were identified. Table 1 shows factor loadings for each item and also the eigenvalue, the amount of variance explained, and the Cronbach's alpha for each factor. Factor one, Budget (a behavioral component), had two items which

explained 30.5 percent of the variance (eigenvalue = 1.83, Cronbach's alpha = .81). Factors two and three were Evil (an affective component) and Success (a cognitive component), respectively. Because the inter-factor correlations were very small, the factor loadings of promax (oblique) rotation, which assumes factors are related, are similar to those of varimax rotation (see Table 1).

Insert Tables 1 and 2 about here

Results show that first, the six items have very low and negligible cross-loadings. Second, the inter-factor correlations are small and negligible. Thus, these factors are fairly independent and measure different constructs. Third, Factors Budget, Evil, and Success identified in the present study are clearer and better than those identified in Tang's (1992, in press a) previous studies. These items will be used to test the goodness of fit using confirmatory factor analysis.

Confirmatory Factor Analyses (CFA)

Confirmatory factor analyses (CFA) allows researchers to test the data using the hypothesized factor structure and examine the goodness of fit. In the present study, CFA was conducted using CALIS in SAS. Bentler (1985) argued that in order to achieve reliable estimates in maximum likelihood estimation, a sample size to parameter ratio of 5:1 or more is required. In the present study, the sample size to parameter ratio was 25.8:1 which was more than sufficient for Bentler's criterion.

Table 1 shows the parameter estimates (i.e., factor loadings) of the six items on their hypothesized three factors of the Money Ethic Scale: Budget, Evil, and Success. The two items were strongly loaded on the specific predicted Factor. The goodness of fit index (GFI) was .96 which indicated a strong fit between the theoretical model and the research data. The goodness of fit index adjusted for degrees of freedom (AGFI) was .94. The difference between the two indexes was small and negligible.

The most widely used indication of fit is the chi-square statistic. The chi-square statistic is employed to examine the ratio of chi-square relative to the degrees of freedom, although chi-square has been found to depend on the sample size (Marsh, Balla, & McDonald, 1988) and is insensitive to improper solutions. Table 1 shows that assuming the model fits the data perfectly, the probability of having such a good solution is greater than .06 [chi-square (df = 9) = 16.45]. Further, Bentler and Bonett's non-normed index was .94 and the Bentler and Bonett's NFI was .92. The probability of close fit was .22. All these results suggest a good fit between our model and our data. The six items of the Short Money Ethic Scale load on their hypothesized factors: Budget, Evil, and Success.

Multivariate Multiple Regression Using the Money Ethic Scale

The factor scores of Budget, Evil, and Success were calculated and used to predict Altruism, Conscientiousness, intrinsic job satisfaction, extrinsic job satisfaction, and commitment using a multivariate multiple regression. It was shown that the linear combination of Factors Budget, Evil, and Success was a significant

predictor of the linear combination of these five variables, Wilks' Lambda = .776, F (15, 406) = 2.61, $p < .001$. Further, the linear combination of the three factors of money was a significant predictor for the four of the five criterion variables (Table 2).

The results indicated that people who Budgeted money carefully tended to display a high level of Altruism, conscientiousness, and intrinsic job satisfaction. Those who believed that money is not Evil tended to show a high level of Altruism, intrinsic job satisfaction, and commitment. Although different measures of job satisfaction were employed in the present study, these results supported general findings of Tang (1992). The participants of this study had lower income than that of the average American workers. Thus, they may not perceive money as a symbol of Success in their lives (notice the negative CALIS estimates of factor loadings on Success at the bottom of Table 1). Factor Success is not related to these criterion variables. Future research should examine people's endorsement of the Money Ethic and work-related beliefs and behaviors in different occupations and income levels.

Conclusion

Results of the present study suggest that the revised 6-item Money Ethic Scale has three clearly identified factors: Budget, Evil, and Success. The three factors have displayed differential patterns of relations with other work-related variables. These results offer additional discriminant validity and nomological network of the Money Ethic Scale. The revised Money Ethic Scale is simple, short, and easy to use and may be adopted for widespread use in research especially in the rapidly expanding literature on the psychology of money beliefs and behaviors.

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Table 1

Factor Analysis Results

Items	Factors Budget	Evil	Success
Exploratory Factor Analysis			
Varimax Rotation			
1. I budget my money very well.	**.91**	.01	.02
2. I use my money very carefully.	**.91**	-.11	.03
3. Money is the root of all evil.	-.06	**.88**	.03
4. Money is evil.	-.03	**.88**	-.01
5. Money is a symbol of success.	-.14	.02	**.87**
6. Money represents one's achievement.	.19	-.00	**.85**
Eigenvalue	1.83	1.54	1.39
Amount of Variance Explained (%)	30.49	25.65	23.11
Cronbach's Alpha	.81	.70	.66
Total Amount of Variance Explained = 79.3%			
Promax Rotation			
1. I budget my money very well.	**.92**	.06	-.00
2. I use my money very carefully.	**.91**	-.07	.01
3. Money is the root of all evil.	-.01	**.88**	.02
4. Money is evil.	.01	**.88**	-.02
5. Money is a symbol of success.	-.16	.00	**.87**
6. Money represents one's achievement.	.17	-.00	**.85**
Inter-Factor Correlations			
1. Budget		-.10	.05
2. Evil			.02
3. Success			

Confirmatory Factor Analysis			
CALIS Estimates of Factor Loadings Items	Budget	Evil	Success
1. I budget my money very well.	.73		
2. I use my money very carefully.	.93		
3. Money is the root of all evil.		.98	
4. Money is evil.		.56	
5. Money is a symbol of success.			-.64
6. Money represents one's achievement.			-.76

Table 2

Multivariate Multiple Regression Results

Variable	Parameter Estimate	t	p	ANOVA F	ANOVA df	ANOVA p	R^2
1. Altruism							
Intercep	27.98	92.51	.000	3.66	3/151	.014	.0677
Budget	0.81	2.65	.009				
Evil	-0.69	-2.25	.026				
Success	-0.07	-0.24	.814				
2. Conscientiousness							
Intercep	35.81	93.66	.000	10.03	3/151	.000	.1661
Budget	2.05	5.31	.000				
Evil	-0.56	-1.46	.146				
Success	-0.51	-1.33	.185				
3. Intrinsic Job Satisfaction							
Intercep	48.93	83.98	.000	4.50	3/151	.005	.0821
Budget	1.60	2.71	.008				
Evil	-1.42	-2.41	.017				
Success	0.63	1.07	.287				
4. Extrinsic Job Satisfaction							
Intercep	20.06	48.25	.000	1.87	3/151	.137	.0359
Budget	0.75	1.79	.076				
Evil	-0.65	-1.54	.125				
Success	0.26	0.63	.532				
5. Organizational Commitment							
Intercep	36.32	64.96	.000	2.69	3/151	.048	.0508
Budget	1.05	1.86	.065				
Evil	-1.31	-2.33	.021				
Success	-0.01	-0.03	.980				

Multivariate Statistics and F Approximations (MANOVA)	F	df	p
Wilks' Lambda = .776	2.61	15/406	.001

Note. Factor scores of Budget, Evil, and Success were used to predict five dependent (criteria) variables.